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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,464	01/21/2004	Paul Rich	WLJ.099	1392
20987 7590 07/17/2007 VOLENTINE & WHITT PLLC ONE FREEDOM SQUARE 11951 FREEDOM DRIVE SUITE 1260 RESTON, VA 20190			EXAMINER MCDONALD, RODNEY GLENN	
			ART UNIT	PAPER NUMBER
			1753	
			MAIL DATE	DELIVERY MODE
			07/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/760,464

Applicant(s)

RICH ET AL.

Examiner

Rodney G. McDonald

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weichart et al. (US PG PUB 2003/0075522 A1) in view of Francis (U.S. Pat. 6,465,353) and Weichart (US PG PUB 2006/0108231 A1).

Regarding claim 1, Weichart et al. teach an apparatus for processing a substrate wafer including a chamber 1. (Page 4 paragraph 0044) A plasma creation element 2 for creating a plasma in a zone of the chamber. (Page 2 paragraph 0022) An electrostatic chuck for retaining a substrate at a substrate location in or adjacent to the zone. (Page 4 paragraph 0041) The apparatus includes a dark space shield 5b

circumjacent the periphery of the location for preventing the presence of the plasma between the shield and the periphery of a substrate in the location whilst allowing processing of the substrate. (Page 4 paragraph 0041; paragraph 0043)

Regarding claim 2, Weichart et al. describes the shield 5b as generally annular. (Page 4 paragraph 0041)

Regarding claim 3, Weichart et al. describe the shield 5b as electrically conducting. (Page 4 paragraph 0041, paragraph 0043)

Regarding claim 4, Weichart et al. teach that the shield 5b is grounded. (Page 4 paragraph 0043)

Regarding claim 5, Weichart et al. teach that the chuck is also a plasma creating element. (Page 4 paragraph 0042, paragraph 0043)

Regarding claim 6, Weichart et al. teach that the chuck is powered. (Page 4 paragraph 0042, paragraph 0043)

Regarding claim 7, Weichart et al. teach a method for processing a wafer. (Page 4 paragraph 0046) Including electrostatically clamping the substrate to the chuck. (Page 4 paragraph 0041) Creating a plasma adjacent to the outwardly facing face of the clamped substrate and locating a dark space shield between the plasma and the periphery of the substrate to prevent the presence of plasma between the shield and the periphery whilst allowing processing of the substrate. (Page 2 paragraph 0022; Page 4 paragraph 0045)

The differences between Weichart et al. and the present claims is that the thickness of the wafer substrate is not discussed (Claims 1,7 and 8) and the dark space

shield overlying a peripheral portion of the upper surface of the substrate is not discussed (Claims 1, 7)

Regarding the thickness of the wafer in claims 1, 7 and 8, Francis teach that semiconductor devices need thin wafers for processing. The thickness can be about 100 microns or less. (Column 1 lines 13-26, lines 39-60; Column 2 lines 38-42)

The motivation for utilizing the feature of Francis is that it allows processing wafers for semiconductor dies. (Column 1 lines 39-40)

Regarding claims 1, 7, Weichart teach that the dark space shield connected to ground for a substrate support on an electrostatic chuck should extend overlying the periphery of the substrate. (Page 6 paragraph 0065)

The motivation for utilizing the features of Weichart is that it allows for preventing etching near the periphery of the substrate. (Page 6 paragraph 0065)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Weichart et al. by utilizing the feature of Francis and Weichart because it allows for processing wafers for semiconductor dies and preventing etching near the periphery of the substrate.

### ***Response to Arguments***

Applicant's arguments filed April 19, 2007 have been fully considered but they are not persuasive.

In response to Applicant's argument that Weichart et al. does not teach a shield overlying a peripheral portion of an upper surface of the substrate during processing of the substrate, it is argued that newly cited reference to Weichart '231 teach providing a

dark space shield overlying a periphery of the substrate. The dark space shield prevents plasma in order to prevent etching of the area underlying near the dark space shield. (See Weichart '231 discussed above)

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

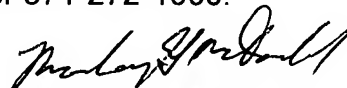
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M-TH with every Friday off..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rodney G. McDonald  
Primary Examiner  
Art Unit 1753

RM  
July 11, 2007